



Mechanical Data Sheet: Vessel

Plant Item No.
24590-PTF-MV-TLP-SEP-00001
Data Sheet No.
24590-PTF-MVD-TLP-P0005



Project:	RPP-WTP	P&IDs	24590-PTF-M6-TLP-P0003
Project No:	24590	Process Calculation	24590-PTF-MEC-TLP-00002
Project Site:	DOE Hanford	Vessel Drawings	24590-QL-POA-MEVV-00001-01-196
System No:	TLP		
Building:	PTF		
Description:	Treated LAW Evaporator Separator Vessel TLP-SEP-00001		

ISSUED BY
RPP-WTP PDC

Reference Data

Charge Vessels (Tag Numbers)	N/A
Pulse Jet Mixers / Agitators (Tag Numbers)	N/A
RFDs/Pumps (Tag Numbers)	N/A

Service Data

Quality Level	QL-1	Fabrication Specification	24590-WTP-3PS-MV00-TP001
Seismic Category	SC-1	Design Code	ASME Section VIII Division 1
Service/Contents	Radioactive Slurry	Code Stamp	U1 Stamp
Design Specific Gravity	1.57	NB Registration	Yes
Max Operating Volume	gal 3,341	Wind Design	None
Total Volume	gal 13,359	Snow/Ash Design	None
Postweld Heat Treat	Not Required	Seismic Design	24590-WTP-3PS-MV00-TP002 24590-WTP-3PS-SS90-T0001
Seismic Base Moment*	ft*lb N/A		
Environmental Qualification	N/A 2		

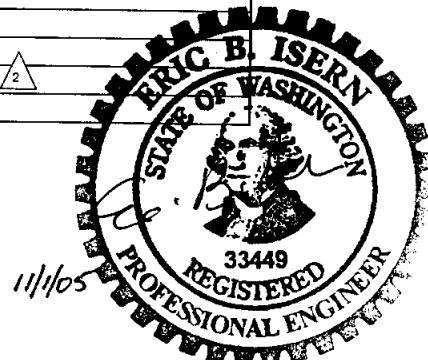
Design Data

Inside Diameter**	inch 76" (Upper), 115" (Lower)	Corrosion Allowance	inch 0.04
Length/Height**	inch 406 3/4		
	Vessel Operating	Vessel Design	Coil/Jacket Design Notes
Internal Pressure	PSIG -13.4	50	N/A Vessel operating at 1.3 psia
External Pressure	PSIG 0	14.7	N/A
Temperature	°F 135/2	175	N/A
Min Design Metal Temp	°F 49	Hydrostatic Test Pressure	PSIG 65

Materials of Construction

Component	Material	Containment	Notes
Top Head	SA 240 304 SS	Auxiliary (Note 6)	1/2" thickness; maximum carbon content of 0.030% for welded components
Shell	SA 240 304 SS	Primary (Note 6)	1/2" thickness; maximum carbon content of 0.030% for welded components
Bottom Head	SA 240 304 SS	Primary (Note 6)	1/2" thickness; maximum carbon content of 0.030% for welded components
Vessel Support	SA 240 304 SS	N/A	Maximum carbon content of 0.030% for welded components
Jacket/Coils/Half-Pipe Jacket	N/A	N/A	
Internals	SA 240 304 SS	Thermowell Primary (Note 6)	Maximum carbon content of 0.030% for welded components
Pipe	SA 312 304 SS	Note 6	Maximum carbon content of 0.030% for welded components
Forgings/ Bar stock	SA 479 304 SS	Note 1	Maximum carbon content of 0.030% for welded components
Gaskets	304 SS		Flexitallic spiral wound, Graphite Filler
Bolting	Nitronic 60		Dwg. 24590-QL-POA-00001-01-00302 (Captive Bolts) 2
Other (Fittings) 2	SA 403 WP 304 SS		Maximum carbon content of 0.030% for welded components

Note: Please note that source, special nuclear and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA), are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts, that pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.



EXPIRES: 07/28/07

This Bound Document Contains a total of 2 sheets

2	Issue for Permitting Use	E. Le	S. Crow	N/A	J. Julyk	11/1/05
1	Issue for Permitting Use	E. Le	D. Reinemann	N/A	J. Julyk	2/10/2005
0	Issue for Permitting Use	E. Le	D. Reinemann	N/A	J. Julyk	3/17/2004
Rev.	Reason for Revision	Preparer	Checker	Reviewer	Approver	Date



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Miscellaneous Data

Orientation	Vertical
Support Type	Stainless steel legs
Insulation Function	None
Insulation Thickness	inch None
Insulation Material	None
External Finish	Welds descaled as laid
Internal Finish	Welds ground smooth; lower 16'-3 7/16" shell and cone to be #4 polished finish.

Notes

- (1) Nozzles located below the top of the overflow nozzle are primary containment. See 24590-WTP-3PS-MV00-TP001 for NDE requirements.
- (2) Nozzle tolerance +/- 1/4"
- (3) Material for demister pad is Inconel 625 fine mesh
- (4) Non-replaceable 40 years design life (except demister pads section)
- (5) NDE for this vessel must meet requirements per para. 6.1, 6.2 and 7.2 of specification 24590-WTP-3PS-MV00-TP001
- (6) All welds forming part of the primary and auxiliary containments, including the nozzle attachment welds shall be subjected to 100% volumetric examination.
- (7) This vessel is located in a Black Cell.
- (8) Vendor to specify all metal thicknesses
- (9) Contents of this document are Dangerous Waste Permit affecting 2
- (10) All vessel nozzle loads due to thermal expansion are estimated based on the maximum operating temperature of 150 degree F. 2
- (11) Environmental Qualification is not applicable since this vessel is not Important-to-Safety (non-ITS) and all the materials of construction are metallic (24590-WTP-GPG-ENG-086, Rev. 0) 2